Ingredients of excess: A study of Vietnamese *quá*

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Abstract   We describe the various uses of the Vietnamese morpheme *quá* which appears in excessive constructions. Unlike most other degree morphemes in Vietnamese, *quá* can precede or follow its gradable predicate, and we argue that these two different uses convey excess in very different ways: pre-predicate *quá* encodes purpose-oriented excessive truth conditions, whereas post-predicate *quá* is a comparative which projects a not-at-issue malefactive inference. We offer concrete proposals for the syntax and semantics of these constructions and relate them to corresponding cognate constructions in contemporary Chinese languages. We additionally describe two other uses of *quá*, as an intensifier with speaker commitment and as an exclamative marker, and explain how these senses developed from the core excessive constructions. This study thus offers an explanatory account of the various uses of this multifunctional expression and the relationships between them, grounded in the history of the language and in principles of semantic change.

Contents

1 Introduction

Excessive constructions such as the English *This ball is too big* are degree constructions that express that a measured degree exceeds some admissible value. Such a meaning might be expressed in at least one of two ways. One is to express that the degree measured by the gradable predicate — the *target* degree, e.g. the size of the ball — exceeds an "upper bound of admissibility" (Meier, 2003) for a particular purpose (1a). Another approach is to measure and comment on the target degree, but not in reference to any purpose-oriented threshold, and then also express that this situation negatively affects the speaker or other participants (1b).

(1) **Two roads to the expression of excess:**

    a. <u>By purpose-oriented threshold:</u> The target degree exceeds *an upper bound of admissibility, determined by a particular purpose*.

    b. <u>By malefactive inference:</u> The target degree exceeds some standard *and doing so has a negative effect*.

Most previous studies on the formal semantics of excessives have focused on meanings of the first type (1a), including Heim 2000, Meier 2003, Hacquard 2005, Schwarzschild 2008, and Bylinina 2014. Although much less has been said about the approach in (1b), Fortuin (2013) recognizes both purpose-oriented and non-purpose-oriented uses of excessives in his cross-linguistic survey, saying that the latter "implies that there are negative consequences associated with exceeding" a particular threshold (p. 35).

In this paper we argue that natural language can conventionally encode either of these approaches to the expression of excess in (1). Evidence for this claim will come from the study of the Vietnamese excessive morpheme *quá*, exemplified in (2). Unlike most other degree morphemes in Vietnamese, *quá* can precede or follow its gradable predicate, as we see in (2).[1]

(2) **Two excessive constructions with *quá*:**

Quả bóng này {**quá** *to* / *to* **quá**}. (Tớ muốn một quả nhỏ hơn. / Nó không vừa cái túi đâu.)
CL ball this QUÁ big big QUÁ 1sg want one CL small more 3sg NEG fit CL bag PRT
'This ball is too big. (I want a smaller one. / It won't fit in the bag.)'

We will argue that pre-predicate *quá* expresses purpose-oriented excessive truth conditions (1a), whereas post-predicate *quá* is instead a comparative construction that projects a not-at-issue malefactive inference (1b). We begin in section 2 with descriptions of the two excessive *quá* constructions, arguing for their distinct conventionalized meanings. We analyze the two as homophonous but distinct morphemes

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[1] We italicize (the heads of) gradable predicates and bold degree morphemes throughout, and use English 'they' to gloss animate uses of the third-singular pronoun *nó*. Glosses follow the Leipzig glossing conventions, with CL for classifier. Gradable predicates are not limited to adjectives (see note 9), but we concentrate on examples with adjectival predicates.

and describe their syntax and compositional semantics in section 3, building on Erlewine and Nguyen 2022. This account is supported by the history of the two *quá* constructions, which can both be traced back to Middle Chinese.

The expression of excessive meaning is not the only use of *quá*. Pre-predicate *quá* can also function as a type of intensifier, akin to English *very*, but with particular restrictions on its use. Post-predicate *quá* also has an additional function in forming degree exclamatives. We propose in section 4 that both of these senses developed from their corresponding excessives, through processes of semantic change and grammaticalization. We conclude in section 5.

2   Comparing the two excessive *quá*

We begin by investigating the two different *quá* excessive constructions, distinguished by their position of *quá*: *quá* can precede or follow its gradable predicate, as demonstrated above with the adjective 'big' in (2). As previewed above, we will argue that the pre- and post-predicate *quá* excessive constructions are in fact two very different constructions, in their semantics as well as syntax. The pre-predicate excessive *quá* is a purpose-oriented excessive construction of the well-studied kind (1a). It can occur with a purpose clause, but not with a comparative standard or comparison class, and closely parallels the *đủ* sufficiency construction. In contrast, post-predicate excessive *quá* is a comparative that takes an implicit or explicit degree-denoting standard and introduces an additional malefactive inference (1b).

2.1   Pre-predicate excessive *quá*

We first show that pre-predicate *quá* expresses a purpose-oriented excessive meaning. The relevant purpose can be expressed overtly with a purpose clause introduced by *để*, which we gloss as 'for.' The purpose clause has a modal interpretation, which can be made explicit with a modal such as *có thể* in (3) below.

(3)   **Pre-predicate *quá* with overt purpose clause:**

Cái bàn   này **quá** *to*   ([purpose để (có thể) đặt (nó) ở   phòng khách]).
CL   table this QUÁ big   for able   put 3sg LOC living-room
'This table is too big (to be able to put in the living room).'

Example (3) expresses that the table's size is so large that the purpose cannot be attained, i.e. that we cannot cannot put it in the living room. We formalize the description of the truth condition of pre-predicate *quá* excessive constructions in section 3.1 below, based on prior work on the semantics of English *too* as in Meier 2003 and Schwarzschild 2008.

The relevant purpose may also be introduced by other devices that introduce goals such as an anankastic conditional as in (4). It may also be inferred via context: for instance, in example (5), pragmatic reasoning based on the assumed relevance of the preceding sentence leads us to infer that the speaker is interested in lifting the box.

(4) **Describing purpose of excessive *quá* with a conditional clause:**

Cái túi này **quá** *nhỏ* [nếu chúng ta dùng nó để đựng cái máy tính kia].
CL bag this too small if 1pl.incl use 3sg for carry CL laptop that
'This bag is too small if we use it to carry that laptop.'

(5) **Indirectly describing the purpose and threshold for excessive *quá*:**

Tớ chỉ có thể nhấc 15kg. Cái hộp này **quá** *nặng*.
1sg only able lift 15kg CL box this too heavy
'I can only lift 15kg. This box is too heavy.'

In all of these uses of pre-predicate *quá*, the measured degree is not related to any particular standard or to corresponding measures of other objects. This is reflected by the fact that pre-predicate *quá* cannot take a measure phrase standard (6b), unlike comparatives (6a). It also cannot take a comparison class, as we demonstrate later in section 4.1.

(6) **Pre-predicate *quá* cannot take a measure phrase standard:**

a. Sợi dây này *dài* **hơn** [standard 2m].
CL string this long more 2m
'This string is longer than 2m.'

b. Sợi dây này **quá** *dài* (*[standard 2m]). Tìm sợi ngắn hơn đi.
CL string this QUÁ long 2m find CL short more PRT
'This string is too long (*than 2m). Find a shorter one.'

Many previous works have noted both semantic and syntactic parallels between expressions of excess and sufficiency, such as English *too* and *enough*. In Vietnamese, sufficiency is expressed using the degree morpheme *đủ*, which necessarily precedes its gradable predicate. See example (7). The semantics of the sufficiency construction expresses that the measured degree (here, the table's size) is so great that the purpose *is* attained: in this case, that we are able to put the table in the living room.

(7) **The *đủ* sufficiency construction:**

Cái bàn này **đủ** *to* ([purpose để (có thể) đặt (nó) ở phòng khách]).
CL table this enough big for able put 3sg LOC living-room
'This table is big enough (to be able to put in the living room).'

The *đủ* sufficiency construction parallels the behaviors of pre-predicate excessive *quá* that we have surveyed above: in particular, its relevant purpose may be introduced by a *để* clause or another strategy

as in (4–5) above, and it is unable to take a comparative standard or comparison class. We propose that pre-predicate *quá* excessives and the *đủ* sufficiency construction have a common syntax and a basic core to their semantics, which we introduce in section 3.1.

2.2 Post-predicate excessive *quá*

Next we turn to the construction with *quá* in post-predicate position. Although post-predicate *quá* is often also felicitous in contexts that support the use of pre-predicate *quá* or English *too*, we argue that post-predicate *quá* has a very different syntax and semantics from pre-predicate *quá*. Post-predicate excessive *quá* is a comparative construction — similar in its syntax and semantics to the canonical comparative construction with *hơn* — with an additional, not-at-issue inference that if the target degree exceeds the standard, someone will be negatively affected.

We first begin with some basic distributional properties of post-predicate *quá*, in relation to the pre-predicate *quá* of the previous section, and present evidence for the malefactive inference below. Example (8) shows that post-predicate *quá* is incompatible with a *để* purpose clause, in contrast to pre-predicate *quá* (3).

(8) **Post-predicate *quá* resists a *để* purpose clause:**

Sợi dây này *dài* **quá** (*[purpose để buộc (nó) cách này]).
CL string this long QUÁ   for tie 3sg way this
'This string is too long (to tie this way).'

Example (8) is grammatical without the *để* purpose clause, and expresses that the measured degree exceeds a particular standard and that this negatively affects the speaker or others. The standard may be contextually related to a particular purpose such as tying the string in a particular way, but it cannot be so related by adding a *để* purpose clause.

The standard of comparison for post-predicate excessive *quá* can instead be made explicit through the addition of a comparative standard, such as the measure phrase '2 meters' in (9). Recall from (6) above that pre-predicate excessive *quá* cannot take a comparative standard.

(9) **Post-predicate *quá* takes a measure phrase standard:**

Sợi dây này *dài* **quá** [standard 2m].
CL string this long QUÁ   2m
≈ 'This string is longer than 2m, and this negatively affects me.'

In its ability to take a following measure phrase standard, post-predicate *quá* mirrors the syntax of the comparative morpheme *hơn*, which also follows its gradable predicate:

(10) **Comparative *hơn* also optionally takes a measure phrase standard:**

Sợi dây   này *dài* **hơn** ([standard 2m]).
CL string this long more   2m
'This string is longer (than 2m).'

Given this analogy between post-predicate *quá* and comparative *hơn*, we propose that post-predicate *quá* has the syntax and semantics of a comparative, with the addition of a conventionalized malefactive inference, which we describe as follows:

(11) **Malefactive inference of post-predicate *quá*:**

Not-at-issue requirement: If the target degree exceeds the (possibly implicit) standard, someone (often the speaker) will be negatively affected.

In what follows, we present a series of judgments of felicity and truth in different situations to motivate our description of the inference in (11) and highlight two important properties. First, the malefactive inference is not-at-issue and projects through negation. (See e.g. Simons, Tonhauser, Beaver, and Roberts 2010 on projective content.) Second, the malefactive inference is conditional; that is, it signals that *if* the target degree exceeds the standard, then the speaker or others will be negatively affected. It does not require that anyone actually has been or will be negatively affected.

First, consider the examples in (12–13) below, where we need to find a string that is less than 2m long. In the context in (12), the string has a length of 2.5m and is thus inappropriate for our purpose. The variants of (12) with post-predicate *quá* and *hơn* are both judged as felicitous and true: the string we found exceeds the explicit standard of 2m, and this is problematic, supporting the use of post-predicate *quá*, although the situation also supports the use of *hơn*.

(12) **Need: < 2m; target: 2.5m**

Context: We need a string *less than 2m long*. We find a string in the drawer and measure it. It is 2.5m long.

Sợi dây   này *dài* {✓**quá** / ✓**hơn**} 2m.
CL string this long   QUÁ   more 2m
'This string is longer than 2m.'   *true*

In (13), the measured length of the string is 1.5m. This fails to exceed the standard degree of 2m, so the comparatives with post-predicate *quá* and *hơn* are both judged as false and hence inappropriate in this context.

(13) **Need: < 2m; target: 1.5m**

Context: We need a string *less than 2m long*. We find a string in the drawer and measure it. It is 1.5m long.

Sợi dây   này *dài*   {#**quá** / #**hơn**} 2m.
CL string this long   QUÁ   more 2m
'This string is longer than 2m.'   *false*

This uniform behavior of post-predicate *quá* and *hơn* in (12–13) is explained by their shared comparative truth conditions: both assert that the target degree exceeds the standard degree.[2]

The malefactive inference of post-predicate *quá* (11) however gives it a more restricted distribution than *hơn*. This is evident in the contrast in (14) below, where we now need a string that is *at least* 2m long. The *hơn* comparative is felicitous and true, but the variant with post-predicate *quá* is now judged as infelicitous.

(14) **Need: ≥ 2m; target: 2.5m**

Context: We need a string *at least 2m long*. We find a string in the drawer and measure it. It is 2.5m long.

Sợi dây   này *dài*   {#**quá** / ✓**hơn**} 2m.
CL string this long   QUÁ   more 2m
'This string is longer than 2m.'   *true*

quá ⤳ being longer than 2m would be a problem   *false*

Despite expressing the same at-issue content — that the target degree (2.5m) exceeds the standard degree (2m) — post-predicate *quá* is judged as inappropriate in (14) because the extent of the target degree — the fact that it is greater than 2m — is not problematic for anyone. The malefactive inference is not supported in this context.

Next, we turn to the behavior of post-predicate *quá* under negation. In example (15), we return to a context where a string shorter than 2m in length is needed, and we find a string that is 1.5m in length. Both post-predicate *quá* and *hơn* variants with negation are felicitous in this context:

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[2] The judgments in (12–13) remain the same even if the difference between the target degree and standard degree are much closer; for instance, if the target string is 2.05m in (12) or 1.95m in (13). Following the discussion in Kennedy 2007, 2009, the ability to express "crisp judgments" of this form supports our analysis in section 3 below, where both *hơn* and post-predicate *quá* explicitly express orderings between degrees. Example (69) below also demonstrates the use of *quá* to express a crisp judgment.

(15) **Need: < 2m; target: 1.5m; with negation**

Context: We need a string *less than 2m long*. We find a string in the drawer and measure it. It is 1.5m long.

Sợi dây   này **không** *dài* {✓**quá** / ✓**hơn**} 2m.
CL string this NEG   long QUÁ   more 2m
'This string is not longer than 2m.'   *true*

quá ⇝ being longer than 2m would be a problem   *true*

In this context, the string's length is not an actual problem for the people who want to use it. The felicitous use of post-predicate *quá* signals that *if* the string's length exceeded the standard 2m, we would be negatively affected. The malefactive inference must be conditional, not necessarily realized. In this example, the comparative truth conditions are negated but the conditional malefactive inference survives, unaffected. This can be accounted for if the malefactive inference is not-at-issue and therefore projects through negation (Simons et al., 2010).

Further support for this conception of the malefactive inference comes from example (16), which differs from (15) above only in the needs of the discourse participants: we need a string that is *at least 2m* in length, rather than *less than 2m*. The material facts remain unchanged: the string in question is 1.5m long, which does not exceed the standard of 2m. In this case, the use of post-predicate *quá* with negation is infelicitous.

(16) **Need: ≥ 2m; target: 1.5m; with negation**

Context: We need a string *at least 2m long*. We find a string in the drawer and measure it. It is 1.5m long.

Sợi dây   này **không** *dài* {#**quá** / ✓**hơn**} 2m.
CL string this NEG   long QUÁ   more 2m
'This string is not longer than 2m.'   *true*

quá ⇝ being longer than 2m would be a problem   *false*

The infelicity of post-predicate *quá* in (16) is predicted by our account: the requirement that exceeding the standard (2m) would have a negative effect is not satisfied. Note in particular that, in this situation, the length of the string *is* in fact problematic for our goals: the string is only 1.5m, but we need a string that is at least 2m in length. The malefactive inference does not track whether or not anyone is negatively affected by the extent of the target degree. Post-predicate *quá* is conditional, calculated below negation and projecting through.

We note that the *hơn* variants in (15) and (16) were felicitous throughout. Again, the use of *hơn* is insensitive to the discourse participants' goals and simply expresses that the target degree exceeds the standard degree, here under negation.

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The table in (17) summarizes the judgments presented regarding the felicity and truth conditions of post-predicate *quá* and *hơn*.

(17) **Summary of data on post-predicate *quá* vs *hơn* comparatives:**

desired length	target length	standard length	*quá*	*hơn*	
< 2m	2.5m	2m	✓	✓	(12)
< 2m	1.5m	2m	#	#	(13)
≥ 2m	2.5m	2m	#	✓	(14)
< 2m	1.5m	2m	✓	✓	with negation (15)
≥ 2m	1.5m	2m	#	✓	with negation (16)

These patterns motivate our proposal for post-predicate *quá*: post-predicate *quá* and *hơn* are both comparatives, with a shared basic syntax and at-issue comparative semantics, but with post-predicate *quá* introducing a not-at-issue conditional malefactive inference, giving it a more restricted distribution.[3]

2.3 Summary

In this section we argued that pre- and post-predicate excessive *quá* differ substantially in their conventional semantics and associated syntax. In particular, as noted above, the two excessive constructions exemplify two different approaches to the semantic expression of excess, repeated here in (18) below. We have argued that pre-predicate *quá* is a purpose-oriented excessive (18a), akin to the English *too* construction, whereas post-predicate *quá* is at its core a comparative which also introduces a not-at-issue malefactive inference (18b).

(18) **Two roads to the expression of excess: =(1)**

    a. <u>By purpose-oriented threshold</u>: The target degree exceeds *an upper bound of admissibility, determined by a particular purpose*.

    b. <u>By malefactive inference</u>: The target degree exceeds some standard *and doing so has a negative effect*.

The distinction that we draw between these two types of meanings in (18) is echoed in Fortuin's (2013) broad description of the function of excessives, which we quote from here:

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[3] Our description of the malefactive inference as in (11) predicts all examples of the form "long *quá* 2m" to require that "if it [the string] is longer than 2m, that is a problem." We note that this predicted inference would also be true in a context where, for example, we are looking for a string that is less than one meter in length. However, if we modify an example such as (12) so that we require a string less than one meter, the use of *quá* is judged as degraded. This may reflect a quantity implicature that the stated standard (2m) should be the most informative value that makes the malefactive inference true. We leave a fuller investigation of this question for future work.

(19) **Fortuin's description for excessive meanings:**   (Fortuin, 2013: 35; emphasis ours)

Excessives express that the target degree "exceeds (is more than) the contextually given maximum (maximal appropriate degree)," which may be determined in one of two ways:

  a. "in terms of a situation Z — in which case, exceeding the maximum implies *Z cannot/may not/does not have to be realized*"; or

  b. "(if no such situation Z is given or understood): in terms of an intersubjectively construed or contextually given norm ... — in which case, exceeding the maximum implies that *there are negative consequences associated with exceeding the maximum*".

In both (18) and (19), the (a) characterizations describe excess as making a particular purpose or situation not attain,[4] whereas the (b) descriptions describe excess as leading to some negative effects or consequences.

Recall that in basic examples such as (2), repeated here as (20), speakers report that these two different *quá* constructions express the same excessive meaning.

(20) **Two excessive constructions with *quá*: =(2)**

Quả bóng này {**quá** *to* / *to* **quá**}. (Tớ muốn một quả nhỏ hơn. / Nó không vừa cái túi đâu.)
CL ball this QUÁ big big QUÁ 1sg want one CL small more 3sg NEG fit CL bag PRT
'This ball is too big. (I want a smaller one. / It won't fit in the bag.)'

Our description here allows us to understand such intuitions. The purpose-oriented excessive semantics (18a) entails that the relevant goal expressed by the purpose cannot be attained. In a case where the attainment of such goals inherently bear a positive association, its non-attainment will have a negative effect.[5] On the other hand, claiming that the degree exceeds a certain standard and that this negative affects someone (18b) could suggest that some desired goal has become unattainable, where one is contextually salient. Both approaches in (18) will thus often systematically result in the the same overall message of excess.

For Fortuin 2013, the two-pronged description in (19) is used to delimit the scope of his typological study, admitting examples both with and without a clearly relevant situation or purpose. That is, it appears that Fortuin intends for (19) to describe two different classes of uses of a shared core meaning of excess. The link between non-attainment of a particular purpose and malefactivity is also made by Nouwen (2018), who notes that "at some indeterminate level of analysis, excess is bad and sufficiency is good...

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[4] We explain in section 3.1 below how the two (a) descriptions — in terms of exceeding "an upper bound of admissibility, determined by a particular purpose" (18a) and exceeding a threshold that "implies [a particular situation] cannot/may not/does not have to be realized" (19a) — are related to one another.

[5] This is not uncontroversial and may not always be true. For instance, Meier (2003: 70) opens her paper with *The food is too good to throw (it) away*. It seems difficult to empirically determine how strongly the inability to throw away such food negatively affects anyone, if at all.

Excessives are negative because they do not reach goals." (But see also note 5.) The shared intuition here is that there is a deep conceptual link between non-attainment of a particular purpose or goal and expressing negative affect (malefactivity), making many individual instances of excessives potentially compatible with either type of description, as illustrated through our discussion of (20) as well.

Against this backdrop, a primary contribution of this paper is to show that natural language grammars can distinguish and conventionally encode each of these two different approaches to the description of excess. This is evident in Vietnamese, where the two are expressed by two morphosyntactically distinct constructions involving the form *quá*, preceding or following its predicate. In particular, unlike in Fortuin's description, excessive meaning of the (b) form — which we claim is conventionally expressed by post-predicate *quá* — is not simply what is expressed or interpreted when "no such situation Z is given or understood" (19b); post-predicate *quá* may be used in contexts where the context has established a salient goal as well. In addition, we have demonstrated that the malefactive inference of post-predicate *quá* excessives is a projective, not-at-issue meaning.

3 Analysis of pre- and post-predicate excessive *quá*

We now turn to the syntax and compositional semantics for these two excessive *quá* constructions, and relate them to the broader landscape of degree constructions in Vietnamese. Our analysis will treat pre- and post-predicate excessive *quá* as two distinct lexical items, which receives support from the historical Sino-Vietnamese origins of the two different constructions and their cognate constructions that are attested in contemporary Chinese languages.

As noted in the introduction, *quá* stands out within the inventory of degree morphemes in the language in its ability to both precede and follow its gradable predicate. Degree morphemes such as *đủ* 'enough' must precede its predicate (21a) whereas many others such as *hơn* 'more' must follow (21b).

(21) **Pre- and post-predicate degree morphemes:**

a. Nó {**đủ** *cao* / **cao* **đủ**}.
   3sg eno. tall / tall eno.
   'They're tall enough.'

b. Nó {*****hơn** *cao* / *cao* **hơn**}.
   3sg more tall / tall more
   'They're taller.'

c. Nó {**quá** *cao* / *cao* **quá**}.
   3sg too tall / tall too
   'They're too tall.'

Setting aside degree modifiers such as intensifiers, which describe the measured degree in relation to its scale and contextual expectations thereof (e.g. *rất* 'very'),[6] *quá* stands alone in the inventory of degree morphemes in the language in allowing both pre- and post-predicate positions, as in (21c). The inventory of all such degree morphemes, modulo degree modifiers, is presented in (22) below, noting their availability preceding and following a gradable predicate *A*.

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[6] Degree modifiers include items such as *rất* 'very' which must precede its predicate, *lắm* 'very' which must follow its predicate, and *thật* 'really' which may precede or follow. We provide a full inventory of such items in Erlewine and Nguyen 2022.

(22) **Degree morphemes in Vietnamese:**

'enough'	'too'	'more'	'as'	'most'	'to the extent'
đủ A purpose-oriented sufficiency	*quá* A purpose-oriented excessive	**hơn* A	**như/bằng* A	**nhất* A	**đến nỗi* A
*A *đủ*	A *quá* ... comparative w/malefactive	A *hơn* ... comparative	A *như/bằng* ... equative	A *nhất* ... superlative	A *đến nỗi* ... result

We argued in section 2 above that pre- and post-predicate excessive *quá* have distinct conventional semantics as well as syntax, above and beyond their difference in linear position. In particular, we highlighted syntactic and semantic parallels between pre-predicate *quá* and the *đủ* sufficiency construction and between post-predicate *quá* and the *hơn* comparative construction.

In this section, we present concrete proposals for the syntax and semantics of both of the excessive *quá* constructions, as well as their closely related sufficiency and comparative constructions, highlighted together in (22) above. Our analysis builds on the proposal of Erlewine and Nguyen 2022 that pre- and post-predicate degree morphemes differ substantially in their syntax, with pre-predicate morphemes being functional heads in the extended projection of gradable predicates and post-predicate morphemes projecting phrasal modifiers. The latter move for their semantic interpretation, overtly and to the right, explaining their linear position following their predicate. The analysis also explains the fact that only post-predicate degree morphemes can introduce arguments such as comparative standards (indicated by "..." in (22) above), which we already saw was a distinction between pre- and post-predicate *quá*. We begin with pre-predicate *quá* and *đủ* in section 3.1 and then turn to post-predicate and related comparatives in section 3.2. Then, in section 3.3, we discuss the history of *quá* in Vietnamese, which serves to support our analysis of pre- and post-predicate *quá* as two etymologically related but distinct expressions.

3.1 Purpose-oriented excess and sufficiency with pre-predicate *quá* and *đủ*

We begin by presenting a syntax and semantics for the pre-predicate *quá* excessive and *đủ* sufficiency morphemes.

Here we adopt a standard framework for degree semantics in the tradition of Cresswell 1976 and von Stechow 1984.[7] Degrees denote measures on a scale and are of type *d*, with commensurable degrees on a scale forming a total order ≤. Gradable predicates such as *cao* 'tall' denote relations between degrees and individuals, of type $\langle d, et \rangle$, as in (23).

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[7] See e.g. Beck 2011, Morzycki 2015: ch. 3, and Hohaus and Bochnak 2020 for more recent introductions.

(23) $\llbracket cao$ 'tall'$\rrbracket^w = \lambda d . \lambda x . x$ is d-tall in w

Gradable predicate denotations such as (23) are *downward-scalar*, in the sense that, if something is d-tall for a particular degree d, they will also be d'-tall for all lower degrees, $d' < d$. We define this notion in (24), following Heim 2000.[8] This scalar property of gradable predicates will be important in the discussion below.

(24)   A function G of type $\langle d, et \rangle$ is *downward-scalar* iff $\forall x \forall d \forall d' [(G(d)(x) \land d' < d) \rightarrow G(d')(x)]$

We argue in Erlewine and Nguyen 2022 that all pre-predicate degree morphemes — including pre-predicate excessive *quá* and 'enough' *đủ* — are functional heads of category Deg in the extended projection of gradable predicates.[9] In the general case, their denotations are of type $\langle \langle d, et \rangle, et \rangle$, taking their gradable predicate complement as an argument and returning a non-gradable predicate denotation. This general structure for pre-predicate degree morphemes is schematized in (25).

(25)   **The syntax and semantics of pre-predicate degree morphemes:**

DegP
$\langle e, t \rangle$

Deg
$\langle \langle d, et \rangle, et \rangle$

XP
$\langle d, et \rangle$
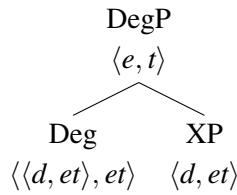
Following the discussion of excessive and sufficiency construction meanings in Schwarzschild 2008 and Grano 2022, we propose the following denotations for the pre-predicate excessive *quá* and the *đủ* sufficiency morphemes. Both make use of the BECAUSE predicate in (27) below, taken from Schwarzschild 2008: 325 with a minor presentational change.[10]

(26)   **Denotations for pre-predicate *quá* excessive and *đủ* sufficiency morphemes:**

a. $\llbracket quá$ 'too'$\rrbracket^w = \lambda G_{\langle s, \langle d, et \rangle \rangle} . \lambda x . \exists \theta_d . \text{BECAUSE}(w)(\lambda w' . G(w')(\theta)(x))(\neg Q)$

b. $\llbracket đủ$ 'enough'$\rrbracket^w = \lambda G_{\langle s, \langle d, et \rangle \rangle} . \lambda x . \exists \theta_d . \text{BECAUSE}(w)(\lambda w' . G(w')(\theta)(x))(Q)$

[8] Although our definition is based on Heim 2000: 216, Heim as well as Nouwen (2011) refer to the property simply as monotonicity on the degree argument. Here we follow works such as Abrusán and Spector 2011: 110 and Beck 2012: 238, 2013: 6 in using the term "downward-scalar," originally defined for predicates of degrees or numbers of type $\langle d, t \rangle$ in Beck and Rullmann 1999: 257.

[9] Although we have concentrated on examples with adjectival predicates such as *cao* 'tall' here, all pre-predicate and post-predicate degree morphemes also apply to gradable predicates such as gradable VP predicates (headed by a verb such as *giống* 'resemble,' *thương* 'feel sorry for,' or *nhớ* 'miss'), gradable sentential adverbs, and quantity noun phrases headed by *nhiều* 'many/much' or *ít* 'few/little.' This suggests that all degree morphemes in Vietnamese are insensitive to the syntactic category of the predicate they combine with (unlike degree morphemes in some other languages which express category-selectivity; see e.g. Doetjes 1997, 2008), requiring only that their sister be a gradable predicate of type $\langle d, et \rangle$ (or a similar, suitably type-shifted type in the case of gradable adverbial modifiers). See Erlewine and Nguyen 2022 for examples with all such predicate types.

Lemon 2020 argues that degree arguments of gradable predicates in Vietnamese are introduced by a functional head, rather than the lexical predicates themselves. Here we present gradable predicates as introducing their degree arguments, e.g. with gradable adjectives being type $\langle d, et \rangle$, but our core proposal is compatible with Lemon's system as well.

[10] See also Humberstone 2006: 277–278 for discussion on the centrality of what Humberstone calls "the *because* aspect" in expressions of excess and sufficiency.

(27) BECAUSE$(w)(p)(q)$ is true iff (i) p is a reason for q and (ii) p and q are true in w.

A few comments are immediately in order. First, *quá* and *đủ* in (26) take intensionalized complements, which necessitates the use of a rule such as Intensional Functional Application (Heim and Kratzer, 1998: 308) and makes both denotations of type $\langle\langle s, \langle d, et\rangle\rangle, \langle e, t\rangle\rangle$, where worlds are type s. Second, both *quá* and *đủ* make reference to a contextually determined proposition Q of type $\langle s, t\rangle$, which we will refer to here as the *consequence*.[11] The consequence is a modalized proposition that may be specified using a conventionalized goal or purpose-introducing expression, such as a *để* purpose clause, or otherwise inferred from the context.

We can informally characterize the proposed semantics for excess and sufficiency in (26) as in (28) below, where we underline the minimal point of contrast between the two expressions.

(28) a. $[\![quá]\!]^w(G)(x)$ requires that there is a threshold degree θ such that:

    (i) x being G to degree θ is a reason for the consequence Q <u>to not attain</u>, and

    (ii) indeed, x is G to degree θ and so Q <u>does not attain</u> in w.

  b. $[\![đủ]\!]^w(G)(x)$ requires that there is a threshold degree θ such that:

    (i) x being G to degree θ is a reason for the consequence Q <u>to attain</u>, and

    (ii) indeed, x is G to degree θ and so Q <u>attains</u> in w.

Concretely, consider the interpretation of the examples in (29) below. As noted in section 2.1 above, the consequence proposition Q can be specified in a variety of ways, but the use of *để* purpose clause adjuncts is common. We take the purpose clause in (29) below to make salient the consequence proposition as in (30). We assume the *để* clause contains a null subject which refers to Sâm.

(29) Sâm {**quá** / **đủ**}   *cao* để được đi xe buýt miễn phí.
     Sâm too / enough tall for able go bus   free
     'Sâm is {too tall / tall enough} to be able to ride the bus for free.'

(30) Consequence $Q = \lambda w' . \exists w'' \in \text{Acc}(w') [\text{Sâm rides the bus for free in } w'']$
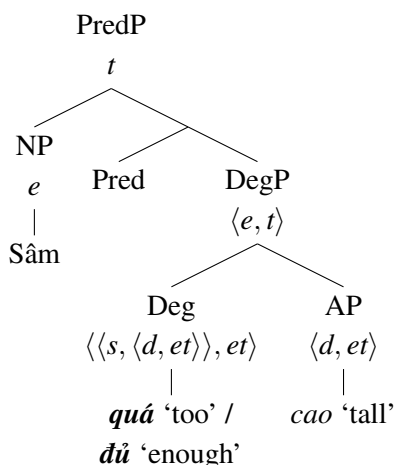
The possibility modal is overtly realized as *được* in the *để* purpose clause in (29), but the same interpretation is available without this overt modal. In such a case, we assume that there is a covert possibility modal; see also Grano 2022: §5 and citations there on the default modal interpretation of nonfinite and other reduced clauses. We will discuss the modality of consequence propositions again below.

We represent the structure of the main clause predicate in (31) below. We assume that a functional head such as Pred (Bowers, 2001) syntactically introduces the subject of non-verbal predicates.[12]

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[11] In referring to a "(potential) consequence" in the general case, rather than a goal or purpose which suggest agent intention, we follow Fortuin 2013. We apply negation $\neg$ to propositions of type $\langle s, t\rangle$ as in (26) in the familiar way.

[12] The subject moves to its canonical, high position above higher functional projections of the clause, which do not present here. See e.g. Duffield 2007; Phan and Duffield 2018, 2022 for discussion.

(31) **The structure of PredP with pre-predicate *quá/đủ* in (29):**

```
                    PredP
                      t
              ┌───────┴───────┐
            NP                 
             e      Pred      DegP
             │               ⟨e, t⟩
            Sâm         ┌──────┴──────┐
                       Deg           AP
                  ⟨⟨s,⟨d,et⟩⟩, et⟩   ⟨d, et⟩
                        │             │
                    quá 'too' /    cao 'tall'
                    đủ 'enough'
```

The Deg head (*quá* or *đủ*) composes with its complement via Intensional Functional Application. Assuming the Pred head to be semantically inert, the result composes further with the NP *Sâm* to result in the following interpretations in (32).

(32) a. $[\![\text{PredP } (quá)]\!]^w$

$= 1$ iff $\exists \theta_d$. BECAUSE $(\lambda w' \, . \, \text{Sâm is } \theta\text{-tall in } w') \, (\neg Q)$

$= 1$ iff $\exists \theta_d$. BECAUSE $(\lambda w' \, . \, \text{Sâm is } \theta\text{-tall in } w')$

$\qquad\qquad (\lambda w' \, . \, \neg\exists w'' \in \text{Acc}(w') \, [\text{Sâm rides the bus for free in } w''])$

b. $[\![\text{PredP } (đủ)]\!]^w$

$= 1$ iff $\exists \theta_d$. BECAUSE $(\lambda w' \, . \, \text{Sâm is } \theta\text{-tall in } w') \, (Q)$

$= 1$ iff $\exists \theta_d$. BECAUSE $(\lambda w' \, . \, \text{Sâm is } \theta\text{-tall in } w')$

$\qquad\qquad (\lambda w' \, . \, \exists w'' \in \text{Acc}(w') \, [\text{Sâm rides the bus for free in } w''])$

As per the informal descriptions in (28) above based on Schwarzschild's BECAUSE in (27), the *quá* excessive based on (32a) will assert that there's a threshold degree θ such that Sâm being θ-tall is a reason for *not* being able to ride the bus for free, and Sâm is indeed θ-tall. Similarly, the *đủ* sufficiency clause based on (32b) will assert that there's a threshold degree θ such that Sâm being θ-tall is a reason *for* being able to ride the bus for free, and Sâm is indeed θ-tall.

Our approach also allows for the correct interpretation of excess and sufficiency constructions with a necessity modal in the *để* purpose clause, such as the deontic necessity modal *phải* in (33a,b). In taking this modal interpretation to always be contributed by the consequence proposition, rather than the semantics of *quá* and *đủ* themselves, we follow Grano 2022, which argues for this view from the behavior of English *enough* sufficiency constructions.

(33) **Để purpose clauses with a necessity modal, with change in meaning:**

    a. Sâm **đủ**   *cao* để phải mua vé.
       Sâm enough tall for must buy ticket
       'Sâm is tall enough to have to buy a ticket.'

    b. Sâm **quá** *cao* để phải chơi ở   đội hạng   2.
       Sâm too tall for must play LOC team division 2
       'Sâm is too tall to be required to play for a 2nd division team.'

       (With his height, he is (also) qualified to play for a 1st division team.)

We conclude this section by noting that many prior works on the semantics of excess and sufficiency, including the prominent Meier 2003, describe excess (as with English *too*) in terms of *strictly exceeding* ($>$) a *maximum* degree that makes a particular purpose possible, and sufficiency (e.g. with *enough*) in terms of *meeting or exceeding* ($\geq$) a *minimum* degree that makes a particular purpose possible. We argue that our adoption of Schwarzschild 2008-style truth conditions for excess and sufficiency constructions using BECAUSE are compatible with — and in fact can explain — such descriptions, without having to stipulate these connections between excess and maximality and between sufficiency and minimality as on Meier's account.

Let us unpack Schwarzschild's definition for BECAUSE$(w)(p)(q)$ in (27) and concentrate on its clause (i), that p is a reason for q. We start with a look at the case of sufficiency in (28b). Without loss of generality, (28bi) claims that there is a degree d such that $D(d)$ is a reason for consequence Q, where D denotes a function from degrees to properties of type $\langle d, \langle s, t \rangle \rangle$. Recall that gradable predicates such as 'tall' are *downward-scalar*, as defined in (24) above. Assuming first then that D is downward-scalar (with other cases addressed in note 13 below), for any higher $d' > d$, $D(d')$ entails $D(d)$ and therefore $D(d')$ will also be a reason for Q. Therefore the set $S = \{d : D(d)$ is a reason for $Q\}$ is a lower-bounded interval of the form $[\min(S), \infty)$. The BECAUSE predicate's clause (ii) then requires that $T = \{d : D(d)(w^*)\}$ overlap with S. With D downward-scalar, T will be an upper bounded interval, so overlap requires that $\max(T) \geq \min(S)$.[13] That is, that the maximal degree attained by the measured degree *meets or exceeds* a *minimum* degree: the minimum degree such that D of that degree makes the consequence Q true, thus deriving the Meier 2003-type description.

Next we consider the parallel excessive semantics, with a negative consequence, as in (28b). The excessive claims that $\exists d$ such that $D(d)$ is a reason for $\neg Q$. By parallel reasoning, if D is downward-scalar, the set $S = \{d : D(d)$ is a reason for $\neg Q\}$ is a lower-bounded interval of the form $[\min(S), \infty)$. Now consider the set $S' = \{d : (\lambda w' . D(w')(d))$ is compatible with $Q\}$ and note that S' is disjoint from

---

[13] D may also be upward-scalar, for instance if it includes negation as in (λd . λw . Sâm is not d-tall in w). In such a case, S will be an upper-bounded interval and T will be lower-bounded, with sufficiency requiring that $\min(T) \leq \max(S)$. This again is compatible with describing sufficiency as meeting or exceeding a minimum degree, with the polarity of relevant degrees reversed.

S. Since *S* is a lower-bounded interval $[\min(S), \infty)$, S' must be upper bounded with $\max(S') < \min(S)$. The excessive claims that $T = \{d : D(d)(w^*)\}$ overlaps with *S* and therefore is disjoint with S', requiring that $\max(T) > \max(S')$. In other words, the maximal degree attained by the measured degree *strictly exceeds* a *maximum* degree: the maximum degree such that *D* of that degree allows for the consequence *Q* to be true.

3.2 Comparatives with post-predicate *quá* and *hơn*

Next we present our analysis for post-predicate excessive *quá* — which we argue is a type of comparative with not-at-issue malefactive inference — as well as the comparative *hơn*, which we claim is the degree morpheme that is closest to *quá* in both its syntax and semantics.

Here we follow our proposal in Erlewine and Nguyen 2022 for the distinctive linear position of post-predicate degree morphemes. There we argue that post-predicate degree morphemes project phrases (DegP) that are phrasal modifiers of the gradable predicate and denote degree quantifiers of type $\langle dt, t \rangle$. We illustrate the structure for the *hơn* and *quá* examples (9–10) in (34) below. The degree quantifier of type $\langle dt, t \rangle$ (DegP), headed by *hơn* or *quá*, cannot compose directly with its gradable predicate sister of type $\langle d, et \rangle$: see (34a). This problem is however resolved by movement of the degree quantifier DegP.[14] We argue in Erlewine and Nguyen 2022 that this movement is necessarily overt and to the right in Vietnamese, deriving the post-predicate word order of these degree morphemes, as illustrated in (34b). We discuss the interpretation of (34b) below.

(34) **The structure of PredP with post-predicate *hơn/quá* in (9–10):**

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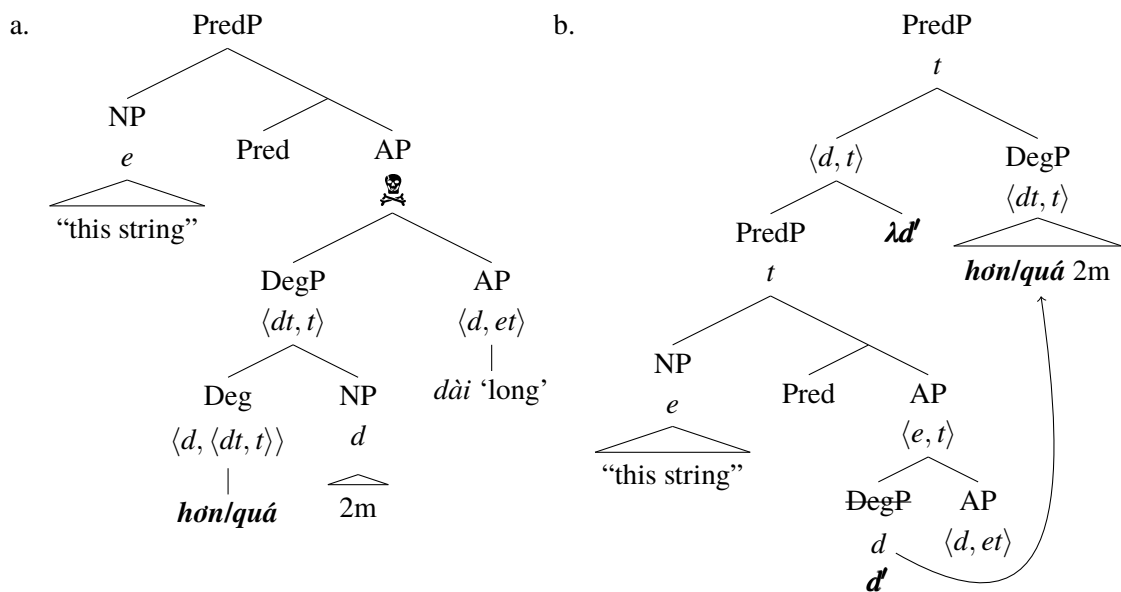
[14] This issue is parallel to the familiar problem of quantificational noun phrases in object position, which can also be resolved by movement; see e.g. Heim and Kratzer 1998: ch. 7.

As we presented in the previous section, we treat pre-predicate degree morphemes instead as being functional heads of type $\langle\langle d, et\rangle, \langle e, t\rangle\rangle$. They therefore compose directly with their gradable predicate complement, as in (31), and always immediately precede their predicate. In proposing that some degree morphemes head an extended projection of the predicate whereas others form phrasal modifiers, we follow Doetjes 1997, 2008 and Neeleman, Van de Koot, and Doetjes 2004.

As seen in section 2.2, both *hơn* and *quá* may be followed by an optional measure phrase standard, as reflected in (34). We adopt the denotation for *hơn* from Lemon 2020 in (35a), and to this we add the not-at-issue meaning component for *quá* in (35b).[15]

(35) **Denotations for post-predicate *quá* and *hơn* comparative morphemes:**

    a. $[\![hơn \text{ 'more'}]\!]^w = \lambda d_d \, . \, \lambda T_{\langle d,t\rangle} \, . \, \max(T) > d$ (Lemon, 2020: 501 ex. 17)

    b. $[\![quá]\!]^w = \lambda d_d \, . \, \lambda T_{\langle s,dt\rangle} \, . \, \max(T(w)) > d$

            NOT-AT-ISSUE: CAUSE $\left(\lambda w' \, . \, \max(T(w')) > d\right) (\text{MAL}_x)$

For post-predicate *quá* in (35b), we describe the not-at-issue meaning in a semi-formal manner using a predicate CAUSE (36), which is the non-veridical component of Schwarzschild's BECAUSE (27), and with MAL$_x$ standing in for the proposition that an individual x is negatively affected.[16] The not-at-issue proposition projects from the point where *quá* has saturated its two arguments, which in (34b) is the higher PredP. Both *hơn* and post-predicate *quá* can also be used without an overt standard, in which case we assume that there is a contextually salient standard.

(36)   CAUSE$(p)(q)$ is true iff p is a reason for q.   (cf (27))

Denotations for the higher PredP in (34b) with both *hơn* and *quá* are given in (37), with *quá* additionally introducing its projective meaning. The subject "this string" then moves to its higher, canonical subject position.[17]

Beck et al. 2004, 2009 argues that languages vary in the availability of degree abstraction, i.e. the construction of derived predicates via abstraction over variables of type d. Our analysis for post-predicate degree morphemes commits us to the existence of degree abstraction. In (34b), we interpret the trace position as a variable d' of type d and abstract over that degree variable using the adjoined binder index $\lambda d'$, resulting in a derived type $\langle d, t\rangle$ degree predicate denotation.

    Lemon (2020) explicitly argues for the existence of degree abstraction in Vietnamese from the structure and interpretation of clausal standards. He also proposes that the DegP headed by *hơn* moves by LF for its interpretation, but does not link this movement to its post-predicate linear position.

[15] In (35b), *quá* takes an intensionalized form of its second argument via Intensional Functional Application, in order to construct its projective meaning. This is not necessary for *hơn* so we keep the simpler denotation in (35a).

    If we follow the logic and notation from Potts 2005 and McCready 2010 for "mixed content" that introduces projective meanings, post-predicate excessive *quá* would have the denotation in (i), of type $\langle d, \langle\langle s, dt\rangle, t\rangle\rangle^a \times \langle d, \langle\langle s, dt\rangle, t\rangle\rangle^s$, where ^{a} indicates the at-issue dimension and ^{s} indicates a meaning that will be shunted after completion.

(i) $[\![quá]\!]^w = \lambda d_d \, . \, \lambda T_{\langle s,dt\rangle} \, . \, \max(T(w)) > d$ $\blacklozenge$ $\lambda d_d \, . \, \lambda T_{\langle s,dt\rangle} \, . \, \text{CAUSE}\left(\lambda w' \, . \, \max(T(w')) > d\right)(\text{MAL}_x)$

See also Xie and Luo 2019 for a similar formal treatment of mixed content degree morphology in Mandarin Chinese.

[16] The target of the malefactive inference is frequently the speaker or other discourse participants. We leave the more precise characterization for this negative affect proposition for future work.

[17] DegP headed by *hơn* or *quá* taking clause-medial scope, as modeled here with movement targeting PredP in (34), is supported by *hơn* and post-predicate *quá* taking scope under negation in examples (15–16) above.

(37) $\llbracket\text{PredP}\rrbracket^w = 1$ iff max $(\lambda d'$. this string is d'-long in $w) > 2$ meters

  $(qu\acute{a} \rightsquigarrow \textsc{cause}\,(\lambda w'$. max $(\lambda d'$. this string is d'-long in $w') > 2$ meters$)\,(\textsc{mal}_x))$

In addition to these degree-denoting standards, *hơn* may also take a clausal or phrasal standard, as exemplified in (38). Lemon (2020) argues that phrasal standards such as *cà phê* 'coffee' alone in (38b) are underlyingly clausal but the result of ellipsis operations. One of his arguments for this conclusion is the availability of the optional complementizer *là* in surface-phrasal standards as in (38b).

(38) **hơn comparatives with (reduced) clausal standards:**

  a. Tôi *thích* trà **hơn** (là) bạn thích cà phê.
    1sg like tea more C 2sg like coffee
    'I like tea more than you like coffee.'

  b. Tôi *thích* trà **hơn** (là) cà phê.
    1sg like tea more C coffee
    'I like tea more than coffee.'   (Lemon, 2020: 499 ex. 8)

Lemon (2020) follows a widely adopted approach in taking clausal and reduced clausal standards to denote degree descriptions of type $\langle d, t\rangle$, requiring a second denotation for *hơn*, which we reproduce in (39); cf (35a). We refer the reader to Lemon 2020 and Erlewine and Nguyen 2022 for further discussion of standards of *hơn* comparatives.

(39) **Denotation for hơn with (reduced) clausal standard:**

  $\llbracket h\sigma n \text{ 'more'}\rrbracket^w = \lambda S_{\langle d,t\rangle}$. $\lambda T_{\langle d,t\rangle}$. $\max(T) > \max(S)$ (Lemon, 2020: 501 ex. 13a)

In contrast to *hơn*, post-predicate *quá* is unable to take clausal or surface-phrasal standards; see (40). We propose that this reflects the fact that post-predicate *quá* has only one denotation: that in (35b), of type $\langle d, \langle dtt\rangle\rangle$, and not one of type $\langle dt, \langle dt, t\rangle\rangle$ parallel to the denotation of *hơn* in (39). *Quá* thus may take a degree-denoting standard (type d), but not a (reduced) clausal standard of type $\langle d, t\rangle$, unlike *hơn*. This contrast is also seen in (41).

(40) **Post-predicate quá cannot take (reduced) clausal standards, unlike hơn:** (cf 38)

  * Tôi *thích* trà **quá** (bạn thích) cà phê.
    1sg like tea QUÁ 2sg like   coffee
    Intended: ≈ 'I like tea more than (you like) coffee, and that's a problem.'

(41) Sợi dây   này *dài* {****quá** / ✓**hơn**} sợi dây   kia.
    CL string this long   QUÁ   more CL string that
    'This string is longer than that string.'

In addition to measure phrases such as '2 meters,' *quá* can also take other degree-denoting nominal descriptions as its standard. This results in contrasts as in (42) below. The standard in (42a) is unambiguously clausal and therefore incompatible with *quá*. The minimally contrasting standard in (42b) is instead

a degree-denoting nominal headed by *mức* 'level' with "I imagine" forming a relative clause modifier, and therefore is compatible with both *hơn* and *quá*.

(42) **Post-predicate *quá* can take a degree-denoting nominal with relative clause:**

    a. Sợi dây   này *dài* {*__quá__ / [√]__hơn__} tôi tưởng tượng.
       CL string this long   QUÁ   more 1sg imagine
       'This string is longer than I imagined.'

    b. Sợi dây   này *dài* {[√]__quá__ / [√]__hơn__} mức (mà) tôi tưởng tượng.
       CL string this long   QUÁ   more level REL 1sg imagine
       'This string is longer than the level I imagined (QUÁ ⇝ and that's a problem).'

Our analysis here thus accounts for the shared syntax and distinct word order of post-predicate *quá* and *hơn*, while also addressing the differences in their semantics and the types of standards they take. Note too that post-predicate *quá*, like *hơn*, forms a phrasal modifier that is a degree quantifier of type $\langle dt, t \rangle$ with its standard, in contrast to pre-predicate *quá* and *đủ* which are type $\langle \langle d, et \rangle, \langle e, t \rangle \rangle$ and therefore compose directly with their gradable predicate. This difference in semantic type ensures that each lexical item is associated with the correct surface position.

3.3 On the history and development of *quá*[18]

As noted above, *quá* is unusual in having both pre- and post-predicate variants, which naturally raises questions regarding the synchronic and diachronic relationship between these two constructions. In this section, we present historical evidence that suggests that versions of both of these uses of *quá* can be traced back to Middle Chinese. This serves to help explain this unique property of *quá* within the inventory of degree morphemes in the language and supports our proposal to treat pre- and post-predicate *quá* as synchronically homophonous but distinct lexical items. This in turn argues against viewing the two as distinct uses of a single, flexible lexical item, or as the result of a relatively recent, Vietnamese-internal innovative development of one construction from the other.

The modern Vietnamese lexicon includes substantial Sino-Vietnamese vocabulary from centuries of language contact with Chinese languages, in both written and spoken forms; see e.g. Alves 2001, 2007, 2009, 2016, Phan 2013, and references there. The morpheme *quá* derives from the Chinese 過 (Alves, 2005: 319). Phan (2013) further identifies *quá* as part of the Late Sino-Vietnamese lexical stratum (p. 299), thereby suggesting that it entered the language (then, Proto-Viet-Mường) from a form of Middle Chinese between the 10th to 12th centuries CE (p. 9). We will refer to the Middle Chinese morpheme 過 in what follows by its Pulleyblank 1991 reconstruction, *kua`*, which we also discuss further below.

We suggest that both pre- and post-predicate *quá* derive from corresponding pre- and post-predicate uses of *kua`* as a degree morpheme in Middle Chinese, as an excessive and comparative, respectively. To our knowledge, there has not been significant work exploring the uses of *kua`* as a degree morpheme in Middle Chinese.[19] However, evidence for the existence of these two constructions in Middle Chinese comes from the range of uses of reflexes of *kua`* (written 過) in contemporary Chinese languages, which all descend from Middle Chinese.

In Cantonese (Yue), a structure of the form "A *gwo* standard" as in (43) is the canonical means of forming a comparative with an explicit standard. The same or similar comparative construction also exists in Mandarin, as in (44), although another comparative construction with distinct morphosyntax (with a pre-predicate standard phrase introduced by *bǐ*) is more common in use.[20]

(43) **Cantonese post-predicate *gwo* comparative:** (adapted from Matthews and Yip, 2011: 189)

今日　　熱 **過** 尋日　（兩　　度）。
Gāmyaht *yiht* **gwo** kàhmyaht (léuhng douh).
today　　hot Gwo yesterday two　degrees
'Today is (two degrees) hotter than yesterday.'

(44) **Mandarin post-predicate *guò* comparative:** (Liu, 2014: 144)

約翰　　高 **過** 瑪麗（五　公分）。
Yuēhàn *gāo* **guò** Mǎlì (wǔ　gōngfēn).
John　　tall Guò Mary　five centimeter

'John is (five cm) taller than Mary.'

These productive degree morpheme uses of *gwo/guò* in Cantonese and Mandarin necessarily follow their predicates and are limited to forming comparatives, not excessives.

In addition, a reflex of *kua`* is also attested as a pre-predicate excessive marker in contemporary Chinese languages. In Mandarin, this use appears to be limited to combinations with monosyllabic adjectives, as in the naturally occurring example in (45). A similar use is seen in (46), in the Hui'an dialect of Southern Min.

(45) **Mandarin pre-predicate *guò* excessive:** (`https://youtu.be/NRbcgVyb15Q` at 2'28")

溫度　　　不能 **過** 高 或者 **過** 低。
Wēndù　　bù-néng **guò** *gāo* huòzhe **guò** *dī*.
temperature not-may Guò high or　　Guò low

'The temperature cannot be too high or too low.'

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[19] Wei Pei-Chuan 2013 briefly mentions both pre- and post-predicate degree uses of *kua`* (過) in her discussion of Old Chinese, but does not present specific examples of these uses there. We thank Barbara Meisterernst (p.c.) for bringing this work to our attention.

[20] See Ansaldo 2010 for a comparative discussion of comparative constructions in various southern Chinese languages versus Mandarin, and Zhang to appear for recent, more detailed discussion of the inventory of comparative constructions in Mandarin and their formal analysis.

(46) **Hui'an Min pre-predicate $k\vartheta^{5\text{-}3}$ excessive:** (Chen, 2020: 455)

過	早	落去，	過	布。
Kə⁵⁻³	*tsa³*	loʔ⁸khɯ⁰	**kə⁵⁻³**	*pɔ⁵*.
ĸə	early	go.down	ĸə	tough

'[The meat] was put in too early, so it is too tough.'

The behaviors of contemporary Chinese languages that we highlight here show that cognates of *quá* have both pre- and post-predicate degree morpheme uses in Chinese languages — in Mandarin as well as in the Yue (e.g. Cantonese) and Min (e.g. Hui'an) groups spoken in the south — and notably with pre-predicate uses forming excessives and post-predicate uses forming comparatives. The attestation of these two different degree constructions using reflexes of *kua`* (過) across divergent contemporary Chinese languages suggest that both constructions existed in their shared ancestor, Middle Chinese, approximately a thousand years ago.

As Alves notes in a series of works (2005, 2007, et seq), functional morphology of Sino-Vietnamese origin may reflect grammatical borrowing from Chinese grammatical constructions or borrowing of content words followed by subsequent, independent processes of grammaticalization in the development of Vietnamese. Here we note that Vietnamese also has a related verb *qua* meaning 'to pass (by),' which differs only in tone from *quá*, and which Alves (2005: 319) notes as also derived from Chinese 過. Fortuin (2013: 38–39) has observed that, cross-linguistically, excessive markers often historically derive from verbs of motion such as 'pass.' This suggests an initially plausible possibility that the degree morpheme *quá* developed Vietnamese-internally from the verb *qua*.

However, this distinction in both form and meaning — between *qua* and *quá* — can also in fact be traced all the way back to Middle Chinese. As Barbara Meisterernst (p.c.) points out, Middle Chinese 過 had two tonal variants, referred to as "level" vs "departing" in traditional Chinese grammars (see e.g. Downer, 1959: 272). The level tone form is a verb meaning 'to pass by' whereas the departing tone form can be a verb 'to exceed' or the degree morphemes at issue here, as well as a nominal meaning 'mistake.' Pulleyblank (1991: 116–117) reconstructs these forms in Late Middle Chinese as *kua* and *kua`*, respectively. The Vietnamese forms *qua* and *quá* are as predicted from these two Middle Chinese forms, based on the regular tone correspondences from Middle Chinese to Sino-Vietnamese due to Maspero 1920 and Wang Li 1948, as discussed in Phan 2013: 87ff.[21] This further supports our claim that uses of *quá* as degree morphemes have their roots in grammatical borrowing from Middle Chinese, rather than being the results of more recent, Vietnamese-internal innovations based on the verb *qua*.

We summarize the proposed lexical and grammatical borrowings from Middle Chinese to Vietnamese in (47) below.[22]

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[21] Phan (2013: 320) also shows that cognates of *qua* and *quá* are also attested in the closely related Mường languages of Muốt, Chỏi, and Khẻn, again with their tonal distinction and basic corresponding meaning distinction intact.

[22] The proposed borrowings are from Middle Chinese to Proto-Viet-Mường (see footnote 21), but we do not represent this inter-

(47) **Lexical and grammatical borrowings from Middle Chinese to Vietnamese:**

Middle Chinese		Vietnamese
kua 'to pass (by)'	>	*qua* 'to pass (by)'
kua` A excessive	>	*quá* A purpose-oriented excessive
A *kua`* ... comparative	>	A *quá* ... comparative w/malefactive

One notable point of divergence between Middle Chinese — as hypothesized based on attested constructions in contemporary Chinese languages, above — is that the post-predicate degree construction is simply a comparative, without any malefactive flavor; see examples (43) and (44) above. One possibility is that post-predicate *quá* conventionalized this specifically malefactive use due to competition with the other comparative morpheme *hơn*, which Alves (2001: 232) notes is of native Vietnamese origin, not Sino-Vietnamese.[23] At this point, we cannot determine specifically when this change in the interpretation of post-predicate *quá* took place.

4 Other uses derived from excessive *quá*

The study of *quá* as an excessive degree morpheme in Vietnamese is further complicated by other uses of *quá* which do not invite descriptions as excessives. We turn to these other uses of *quá* in this section: pre-predicate *quá* as an intensifier with limited distribution (section 4.1) and post-predicate *quá* as a marker of degree exclamatives (section 4.2). We argue that both of these uses should be distinguished from their corresponding excessive *quá* constructions in synchronic grammar but that they derive historically from them, and offer explanations for their semantic extension that predict their patterns of use.

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mediate stage here.

    Note that what we hypothesize for the two degree constructions is the borrowing of surface constructional patterns and their associated semantics, not specifically underlying syntactic structures. A comparison of the morphosyntax of Vietnamese post-predicate *quá* malefactive comparatives (see §2.2 above) with that of contemporary Mandarin post-predicate *guò* comparatives (see e.g. Liu, 2014) suggests substantial differences in their contemporary syntax.

[23] As Ansaldo (2010: 939) notes, the morpheme *hơn* itself has another use as a verb meaning 'to surpass, to outdo.' This makes both *hơn* and what we call post-predicate excessive *quá* count as "exceed comparatives" in the Stassen 1985 typology, albeit with significantly different etymologies (*hơn* being native Vietnamese but *quá* being Sino-Vietnamese) and a difference in their interpretation, as described in section 2.2. Stassen (1985: 43) himself gives a *hơn* comparative as an example of an exceed comparative but does not discuss *quá*.

4.1 Pre-predicate *quá* as an intensifier with speaker commitment

We will first show that pre-predicate *quá* has a second sense, as an intensifier with limited distribution, and that it derived predictably from pre-predicate excessive *quá* described above.

Recall that the truth conditions for excessive pre-predicate *quá* (26a/28a) make reference to a particular consequence, which may be specified using a variety of strategies, none of which are obligatory. Consider a situation where a speaker uses a pre-predicate *quá* excessive without an overly specified consequence. In his discussion of English utterances such as *Strom isn't too old*, Bach (1994) says that such structures, "though syntactically well-formed, are semantically or conceptually incomplete, in the sense that something must be added for the sentence to express a complete and determinate proposition (something capable of being true or false)" (p. 127). Setting aside Bach's question of whether such expressions are indeed best described as not capable of being true or false (see Cappelen and Lepore 2005, Humberstone 2006, and Cappelen 2007 for further debate on this point), through pragmatic reasoning, we as listeners can conclude that the speaker has a particular consequence in mind and has an epistemic basis to assert that the target degree is so high as to make that consequence not attain. The speaker is thus going on record with their own attestation that the target degree is high, to a particular degree that only they may know for certain.

We suggest that, over time, such uses of pre-predicate *quá* without explicit consequence have led to a secondary use of pre-predicate *quá*, as one which indicates a high target degree that the speaker publicly commits to, *without* having a particular non-attaining consequence in mind.[24][25] We schematize this pathway of historical development in (48), which constitutes an instance of semantic change via *context-induced reinterpretation* (Heine, Claudi, and Hünnemeyer, 1991).

(48) **Semantic extension of pre-predicate *quá*:**

quá A		*quá* A
purpose-oriented	>	intensifier with
excessive		speaker commitment

In this section, we show that pre-predicate *quá* indeed has such a use as an intensifier, which should

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[24] The extended use of a dedicated excessive marker as an intensifier is well attested cross-linguistically, for example with English *too* (see OED sense 3, "as a mere intensive"; Quirk et al. 1985: 447–448), French *trop*, and Dutch *te* (Fortuin, 2013: 44). Note too that degree modifiers derived from expressions of excess such as colloquial English *super* and *uber* have been argued to signal subjective evaluations (Waksler, 2012). We hesitate to suggest that all intensifiers derived from excessives signal subjectivity or speaker commitment, although we will show that this indeed is the case with Vietnamese intensifier *quá*.

The development of intensifiers from excessive morphemes also accords with Nouwen's (2011) Markedness Generalization, which claims that intensifiers frequently develop from expressions that "express some form of markedness" (p. 149). Note however that Nouwen's study, and those that he builds on, concentrate on deadjectival intensifiers.

[25] Fortuin (2013: 41ff) notes that intensifiers are used in a number of languages in order to express excess, thereby suggesting a possible pathway of semantic extension from intensifier to excessive, which is the opposite of what we propose here. In the case of pre-predicate *quá*, however, we can be certain that the excessive use is its original, due to cognate pre-predicate constructions in Chinese languages being consistently excessive rather than intensifying, as we saw in section 3.3.

be distinguished synchronically from pre-predicate excessive *quá*, and which has a more restricted distribution than other intensifiers in the language due to its expression of speaker commitment. We begin by observing that many simple pre-predicate *quá* sentences invite translations as both 'too' or 'very,' depending on their context of use. Consider the pair in (49). Here, the two continuations in (49B1,B2) reflect different attitudes by the speaker towards the size of the room.

(49) **Two translations and continuations for pre-predicate *quá*:**

A: Should we rent this room?

B1:   Căn phòng này **quá** *rộng*. Căn phòng kia tốt   hơn.
       CL   room this QUÁ large CL   room that good more
       'This room is <u>too large</u>. That room is better.'

B2:   Căn phòng này **quá** *rộng*. Tớ rất   thích (nó).
       CL   room this QUÁ large 1sg very like   3sg
       'This room is <u>very large</u>. I like it very much.'

The continuation in example (49B1) suggests an interpretation of the pre-predicate *quá* as an excessive with an implicit purpose that cannot be achieved: for example, it is too big for the interlocutors to rent. In contrast, there is not obviously a relevant consequence that cannot be achieved by the room's size in (49B2), where the speaker goes on to say that they like the room very much, making it suitable for the salient contextual goal of renting a room. Intuitively, the example in (49B1) invites a translation using an exceptive, e.g. 'too large,' whereas (49B2) does not.

We argue that these two uses of pre-predicate *quá* synchronically involve two distinct but homophonous lexical items. The first way to distinguish excessive and intensifier pre-predicate *quá* is that the intensifier can take an expression introducing a comparison class, but the excessive cannot. Comparison classes are typically introduced by the phrase *so với* and inform the determination of the threshold for positive form evaluations, as in (50) with *rất*, the most common pre-predicate 'very.'

(50) **Introducing a comparison class with *so với* 'compared with':**

So   **với** các bức tranh   khác, bức tranh   này **rất** *đắt*.
compare with PL CL   picture other CL   picture this very expensive
'Compared to other pictures, this picture is very expensive.'

A *so với* comparison class can co-occur with pre-predicate *quá*, and in such cases, *quá* can only be interpreted as an intensifier, not as an excessive. See the contrast in (51). We note that the contrast we report here is based on speaker intuitions for appropriate translations into English — using an intensifier or an excessive — but we present further evidence for this effect using an acceptability judgment contrast in (53) below.

(51) **Intensifier pre-predicate *quá* can take a comparison class, but the excessive cannot:**

So   với các bạn, Kim **quá** *cao*.
compare with ᴘʟ friend Kim ǫᴜᴀ́ tall

  a.   'Compared to her friends, Kim is <u>very tall</u>.'

  b.   * 'Compared to her friends, Kim is <u>too tall</u> [for an implicit purpose].'

Our discussion here predicts that pre-predicate *quá* cannot simultaneously take a comparison class introduced by *so với*, which is available only for the intensifier *quá* (51), together with a salient consequence that is used to calculate excessive truth conditions. This prediction is borne out. As a baseline, example (52) below is interpreted as unambiguously an excessive *quá*, as the purpose clause highlights a salient consequence — (the possibility of) fitting the ball into the box — that a large target degree makes impossible. Adding a *so với* comparison class to this example, as in (53) below, results in ungrammaticality.

(52) **Unambiguous excessive pre-predicate *quá*:**

Quả bóng kia **quá** *to* [purpose để đặt vừa cái hộp].
ᴄʟ ball that ǫᴜᴀ́ big   for put fit ᴄʟ box

  a.   * 'That ball is <u>very big</u>, for fitting in the box.'

  b.   'That ball is <u>too big</u> to fit in the box.'

(53) **Incompatibility of comparison class with unambiguous excessive pre-predicate *quá*:**

(***So   với** quả bóng này,) quả bóng kia **quá** *to* [purpose để đặt vừa cái hộp].
 compare with ᴄʟ ball this ᴄʟ ball that ǫᴜᴀ́ big   for put fit ᴄʟ box
'That ball is too big to fit in the box (*compared to this ball).'

The evidence that we have presented suggests that pre-predicate *quá* has a use as an intensifier, distinct from the excessive pre-predicate *quá*. The intensifier use is a kind of positive form, claiming that the target degree noticeably exceeds the threshold for the predicate's positive evaluation, which in turn may be determined with reference to a comparison class but without conventional reference to a purpose. The intensifier pre-predicate *quá* is thus interchangeable in many contexts with the canonical intensifiers in Vietnamese, pre-predicate *rất* and post-predicate *lắm*, as in (54). However, the use of *quá* as an intensifier is more restricted than the use of *rất* and *lắm*. Here we set aside the post-predicate intensifier *lắm* and compare the distribution of intensifier *quá* to that of *rất*.

(54) **Three intensifiers in Vietnamese:**

Món cá này { **quá** *ngon*   / **rất** *ngon*   / *ngon*   **lắm** }.
dish fish this ǫᴜᴀ́ delicious very delicious delicious very
'The fish is very delicious.'

We observe that intensifier *quá* can only be used in contexts where the speaker asserts and publicly commits to the intensified evaluation. Evidence that supports this description comes from the limited ability of intensifier *quá* to be embedded and questioned. We first show that intensifier *quá* can be embedded in the content of a 'because' clause, but not of a conditional clause. The contexts and examples here are designed to be incompatible with excessive readings of *quá*. We see that the intensifier *rất* is available in both embeddings.

(55) **Reason clause allows intensifiers *rất* and *quá*:**

    A: Do you think that actress could play the role of the princess?

    B: Bởi vì cô ấy { **rất** / **quá** } *xinh*,   nên cô ấy chắc chắn có thể diễn vai đó.
        because she   very QUÁ beautiful so she certainly able play role that
        'Because she is very beautiful, she certainly can play that role.'

(56) **Conditional clause allows intensifier *rất* but not intensifier *quá*:**

    A: We need a large table. Do you think that table is big enough?

    B: Để tớ đi xem. Nếu cái bàn đấy { **rất** / #**quá** } *to* thì chúng ta sẽ mua nó.
        let 1sg go see   if CL table that very QUÁ big then 1pl.INCL FUT buy 3sg
        'Let me go see it. If that table is very big, we will buy it.'

Note that excessive pre-predicate *quá* is generally unrestricted in its embedding. Examples (57–58) are minimally modified from (55–56) above (with differences underlined) to support the excessive reading of *quá*, and show that excessive pre-predicate *quá* is available in both reason and conditional clauses, unlike intensifier pre-predicate *quá*.

(57) **Reason clause allows excessive pre-predicate *quá*:**

    A: Do you think that actress could play the role of the <u>beggar</u>?

    B: Bởi vì cô ấy **quá** *xinh*,   nên cô ấy chắc chắn không thể diễn vai đó.
        because she   QUÁ beautiful so she   certainly NEG   able play role that
        'Because she is <u>too beautiful</u>, she certainly <u>cannot</u> play that role.'

(58) **Conditional clause allows excessive pre-predicate *quá*:**

    A: We need a <u>small</u> table. Do you think that table is <u>small enough</u>?

    B: Để tớ đi xem. Nếu cái bàn đấy **quá** *to* thì chúng ta phải tìm cái bàn khác.
        let 1sg go see   if CL table that QUÁ big then 1pl.INCL must find CL table another
        'Let me go see it. If that table is <u>too big</u>, we <u>have to find another one</u>.'

We propose that the unavailability of intensifier *quá* within a conditional clause is due to the fact that the speaker is not committed to the truth of the conditional clause, i.e. that the table is very big in (56). The conditional is a supposition that would lead to the truth of its consequent. In contrast, the speaker is

committed to the the truth of the actress being very beautiful in (55), which then allows for the felicitous use of intensifier *quá*. As we see, the other pre-predicate intensifier *rất* 'very' as well as the excessive use of pre-predicate *quá* are not subject to this restriction.

Further support for this characterization comes from the limited compatibility of intensifier *quá* with polar question formation. Vietnamese has multiple strategies for polar question formation; see discussion in e.g. Trinh 2005, Duffield 2013, Nguyen 2021, and Nguyen and Erlewine 2022. The unbiased question with final *không* and biased question with final *à* in (59a,b) only allow for pre-predicate *quá* to be interpreted as an excessive, whereas the confirmation-seeking tag question with final *phải không* allows both excessive and intensifier readings of pre-predicate *quá*. Empirically, the (un)availability of the intensifier readings for these questions can be verified by judging the felicity of the reply in (60) below.

(59) **Polar questions with pre-predicate *quá*:**

    a. Cái bàn đó có quá to **không**?
       CL table that PRT QUÁ big NEG
       'Is that table too big?' / * 'Is that table very big?'

    b. Cái bàn đó quá to **à**?
       CL table that QUÁ big Q
       'Is that table too big?' / * 'Is that table very big?' (biased)

    c. Cái bàn đó quá to **phải không**?
       CL table that QUÁ big correct NEG
       'That table is too big; is that right?' / 'That table is very big; is that right?'

(60) **Reply to (59) which requires intensifier construal:**[26]

    { Có / Ừ }. Chúng ta cần một cái bàn thật to nên chúng ta sẽ mua nó.
      PRT right 1pl.INCL need one CL table really big so 1pl.INCL FUT buy 3sg
    'Yes. We need a very big table so we will buy it.'

    Felicitous reply to (59c) but infelicitous for (59a,b)

The intensifier reading of *quá* is incompatible with *không* and *à* questions, which are pure interrogatives with no speaker commitment to the truth of the proposition at issue. In contrast, *phải không* questions involve the speaker first asserting and committing to a proposition and then seeking confirmation with the question *phải không* 'Is that right?'.[27] The restricted availability of question formation with intensifier *quá* is thus explained by, and further supports, our description of its felicity conditions.

In this section we have identified a distinct, non-excessive use of pre-predicate *quá* as an intensifier that is restricted to contexts of speaker commitment. As discussed at the top of this section, uses of excessive pre-predicate *quá* without an explicit consequence proposition allows for a use of *quá* as

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[26] The question in (59a) which involves the particle *có* is answered in the affirmative most naturally by repeating the particle *có*. *Ừ* is a felicitous affirmative short answer for (59b,c).

[27] This analysis accords with the fact that *phải không* cannot form embedded questions (Duffield, 2013: 141–142).

expressing a speaker evaluation that the target degree is high, to some degree that the speaker alone can evaluate. We propose that intensifier *quá* indeed grammaticalized from such uses into an intensifier with a strong speaker commitment requirement, explaining various properties such as its compatibility with comparison classes and restricted embeddability which we have documented here.

4.2 Post-predicate *quá* as an exclamative marker

Next we turn to another use of post-predicate *quá*, which serves to form degree exclamatives. Degree exclamatives express the speaker's evaluation of a target degree as unusually or surprisingly high; see e.g. Michaelis 2001; Zanuttini and Portner 2003; Rett 2011 for overviews and discussion. We first describe how excessive post-predicate *quá* could be used in situations that make it compatible with an exclamative interpretation. We then show that post-predicate *quá* has indeed grammaticalized into an exclamative marker which must be distinguished from excessive post-predicate *quá* in the contemporary grammar.

One universal human experience is that facts of the world sometimes run counter to our prior beliefs or expectations, whether due to errors of perception, memory, or reasoning. For instance, we may expect tables in a particular context to have a particular maximal size. If we encounter a new table and its size is in fact greater than we expected, one way of conveying this surprising fact would be to use a post-predicate *quá* excessive, with no overt standard, resulting in an expression as in (61).

(61)   **Post-predicate excessive *quá* expressing surprise at an unexpectedly high degree:**

    Cái bàn   này *to*   **quá**.
    CL   table this big QUÁ
    ≈ 'This table is bigger (than I expected), and that's a problem (as I have to revise my beliefs).'

Recall from section 2.2 above that excessive post-predicate *quá* is a comparative, like *hơn*, with an additional not-at-issue malefactive inference. Hearing excessive *quá* used in a situation as in (61), we take the speaker to have a particular standard degree in mind and assert that the target degree is greater than it. Furthermore, the use of *quá* as opposed to *hơn* indicates that exceeding the standard leads to a problem; in such cases where an expectation is violated, the problem may simply be that the speaker's prior beliefs and expectations must be revised, e.g. through a process of belief revision (see e.g. Gärdenfors, 1988).

The communicative function of an utterance as in (61), then, lines up with that of exclamatives. As Rett (2011) summarizes in her study of English exclamative constructions, "exclamatives express what I've called a scalar expectation: that the speaker expected a gradable property to be instantiated only up to a particular degree, and the actual value exceeded that expectation" (p. 422).[28] Grammaticalized

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[28] Zanuttini and Portner 2003 describes the use of *wh*-words as another characteristic property of exclamatives, as the source of the set of alternatives that undergo "widening" (see also Morzycki, 2008), but Badan and Cheng (2015) argue against this criterion on the basis of degree exclamatives in Mandarin Chinese that involve degree morphology rather than *wh*-words, similar to Vietnamese *quá* exclamatives.

exclamatives, however, are not assertions but instead are a variety of expressive speech act (Kaplan, 1999; see also discussion in Rett 2011: 412–414, 435–436), whose content cannot be denied or questioned.

We propose that the repeated use over time of post-predicate excessive *quá* to express surprise at an unexpectedly high degree, as in (61) above, has led to the grammaticalization of post-predicate *quá* as an exclamative marker, as in (62) below.[29] Notice that the continuation in (62) indicates that the large size of the table is not a problem for the speaker, only that it was unexpected. We schematize this hypothesized pattern of development in (63).

(62) **Exclamative *quá*, with no negative affect:**

(Ồ/Oa,) cái bàn này *to* **quá**! Tôi sẽ mua nó.
 wow   CL table this big QUÁ   1sg FUT buy 3sg
'(Wow,) this table is so big! I'll buy it.'

(63) **Semantic extension of post-predicate *quá*:**

A *quá* ...		A *quá* !
comparative	>	exclamative
w/malefactive		

In the remainder of this section, we show that exclamative *quá* is indeed synchronically distinct from excessive post-predicate *quá*, over and above the lack of a malefactive inference as in (62) above.

First we observe that exclamatives that express surprise such as (62) are subject to a recency effect, which Rett and Murray (2013) observe to be a cross-linguistically common property of mirative expressions: "These mirative interpretations are only available relatively recently after the speaker's learning that *p*" (p. 464). Evidence for the recency effect in mirative uses of exclamative *quá* comes from the contrast between (64) and (65):

(64) **Stimulus satisfying the recency requirement for a mirative use of exclamative *quá*:**

Context: I've been looking for a very big table. When I come home, I see a table which is extremely big. I say:

Cái bàn này *to* **quá**!
CL table this big QUÁ
'This table is so big!'

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[29] We give exclamations using intensifier *so* (see e.g. Bolinger, 1972: ch. 10) in our English translations for *quá* exclamatives. However, following discussion in Rett 2011, *wh*-exclamatives such as *How big this table is!* may better convey the expressive nature of *quá* exclamatives.

(65)   **Stimulus not satisfying the recency requirement:**

Context: I've been looking for a very big table. A day ago, I saw a table which I thought was extremely big. Now I am telling you about the table.

\# Cái bàn   đấy *to*   **quá**!
CL   table that big QUÁ
'That table is so big!'

The two contexts above are constructed so that the excessive reading is not available; the salient purpose in the context makes large tables acceptable. We can see that exclamative *quá* is available in (64) where the speaker immediately reacts to seeing the table, in contrast to (65) where the stimulus is not recent for the speaker and the utterance is judged as infelicitous.

Excessive post-predicate *quá*, on the other hand, is not subject to this constraint. This serves to force an excessive interpretation in (66), where the context supports its malefactive inference.

(66)   **Stimulus not recent, but supporting the excessive reading:**

Context: Kim wants to join her school's dance club. After she and the speaker come back from the club, their roommate asks if she is successful. The speaker says:

Kim *cao* **quá**.   Họ không nhận.
Kim tall QUÁ   3pl NEG   accept

a.   \# 'Kim is <u>so tall</u>! They did not accept her.'

b.   'Kim is <u>too tall</u>. They did not accept her.'

We also note that not all exclamative *quá* utterances are expressions of speaker surprise. We have also identified uses where the degree in question is not strictly speaking surprising to the speaker, but rather simply noteworthy in its extent.[30] Such uses are particularly common as expressions of the speaker's own mental or physical state, as in (67). These uses appear to not be subject to the recency requirement: for instance, the felicitous use of (67) with 'hungry' need not involve the speaker recently becoming hungry or recently realizing that they are hungry. Note too that the attitude expressed need not be at all negative, as illustrated with *vui quá* 'so happy.'

(67)   **Exclamative *quá* expressing speaker's own extreme physical state:**

Ôi,   tớ   { *đói*   / *lạnh* / *vui*   / *nhớ* bà   } **quá**!
gosh 1sg   hungry cold   happy   miss grandma   QUÁ
'Gosh, I {am so hungry / am so cold / am so happy / miss grandma so much}!'

Second, we observe that exclamative *quá* is evaluative, reflecting the speaker's evaluation that the target degree is high with respect to the contextually-determined threshold for the predicate's positive

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[30] See Chernilovskaya and Nouwen 2012 for discussion of such non-surprisal uses of exclamatives.

extension. This leads to a contradiction with the continuation in (68). This contrasts from excessive post-predicate *quá*, which as we argued in section 2.2 is a comparative with truth-conditions that require only that the target degree exceed the (potentially implicit) standard degree, thus resulting in no contradiction in (69B).

(68) **Exclamative *quá* is evaluative:**

{Ồ/Oa,} Kim *cao* **quá**!　(# Mặc dù　cô ấy cũng không cao lắm.)
　wow　Kim tall QUÁ　　although she　also NEG　tall very
'Wow, Kim is so tall! (# Although she is not very tall.)'

(69) **Excessive post-predicate *quá* is not evaluative:**

<u>Context:</u> A knows B is looking for an actor. B needs an actor under 1.5m.

A: Kim thế nào?　Cô ấy cao 1.53m.
　Kim how　　　She　tall 1.53m
　'How about Kim? She is 1.53m'

B: Kim *cao* **quá**, mặc dù　cô ấy cũng không cao lắm.
　Kim tall QUÁ although she　also NEG　tall very
　'Kim is too tall, although she is not very tall.'

Third, we observe that exclamative *quá* cannot be embedded, as expected due to these utterances being expressive speech acts rather than assertions. Consider examples (70–71) below. Here the conditional and reason clauses include post-predicate *quá*. Example (70) has a consequent that is compatible with an exclamative or otherwise intensified reading of *quá* but not an excessive, whereas example (71) is compatible with excessive post-predicate *quá*. Speakers judge (70) to be unnatural but (71) to be natural, which is explained by exclamative *quá* being unembeddable, in contrast to excessive post-predicate *quá*.

(70) **Exclamative *quá* cannot be embedded in conditional clause or reason clause:**

{ Nếu / Bởi vì　} cái bàn　đấy *to* **quá** thì　chúng ta sẽ　mua nó.
　if　because　CL table that big QUÁ then 1pl.INCL FUT buy 3sg
　a.　＊ 'If/because that table is <u>so big</u>, we will buy it.'

　b.　# 'If/because that table is <u>too big</u>, we will buy it.'

(71) **Excessive post-predicate *quá* can be embedded:**

{ Nếu / Bởi vì　} cái bàn　đấy *to* **quá** thì　chúng ta phải tìm cái bàn　khác.
　if　because　CL table that big QUÁ then 1pl.INCL must find CL table another
　a.　＊ 'If/because that table is <u>so big</u>, we will need to find another.'

　b.　'If/because that table is <u>too big</u>, we will need to find another.'

We similarly note that exclamative *quá* cannot be negated or questioned:

(72) **Exclamative *quá* is incompatible with negation:**

    * Ồ,   cái bàn này **không** *to* **quá**!
      wow CL table this NEG   big QUÁ
      Intended: 'Wow, this table is not big!'

(73) **Questioned post-predicate *quá* must be excessive:**

    (#Ồ/Oa,) cái bàn đó *to* **quá** { **không**? / **à**? / **phải** **không**? }
      wow   CL table that big QUÁ   NEG   Q   correct NEG

    a.   'Is this table <u>too big</u>?' / 'Isn't the table <u>too big</u>?' / 'The table's <u>too big</u>; is that correct?'

    b.   * 'Is this table <u>so big</u>!?' / 'Isn't the table <u>so big</u>!?' / 'The table's <u>so big</u>! Is that correct?'

The inability of exclamative *quá* to be embedded or questioned is reminiscent of the behavior of pre-predicate intensifier *quá* in section 4.1. However, we saw there that intensifier *quá* can be embedded in limited environments which are compatible with speaker commitment, such as in reason clauses (56) and confirmation-seeking tag questions with final *phải không* (59c). In contrast, exclamative *quá* cannot be embedded or questioned even in these environments.

The final difference between exclamative and excessive post-predicate *quá* is related to the ability to take a comparative standard. Recall that excessive post-predicate *quá* is able to take a degree-denoting standard, which motivated our proposal in section 2.2 that it is a comparative construction at its core. Exclamative *quá*, however, is in general incompatible with comparative standards. For instance, example (74a) is ungrammatical if it is understood as an exclamative. There is however a very limited class of exceptions to this restriction, which are expressions akin to "the imagined level," as in (74b).

(74) **Exclamative *quá* allows only certain idiomatic standards:**

    a.   * {Ồ/Oa}, cái bàn này *to* **quá** 2m!
            wow   CL table this big QUÁ 2m
            'Wow, this table is (so much) bigger than 2m!'

    b.   {Ồ/Oa}, món này *ngon*   **quá** {sức   / mức} (tưởng tượng)!
            wow   CL   this delicious QUÁ capacity level imagine
            ≈ 'Wow, this dish is so delicious, much more than I imagined!'

The availability of such restricted standard phrases supports our proposal that exclamative *quá* historically originated as an extension of excessive post-predicate *quá*, retaining certain fixed collocations that reflect the construction's origins as a comparative construction.[31]

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[31] Prior work on grammaticalization, especially those grounded in syntactic cartography (see e.g. Roberts and Roussou, 2003; Roberts, 2012), may lead us to expect exclamative *quá* (as a clause-typing or speech-act operator) to have a different, higher structural position than that of post-predicate excessive *quá*. Although exclamative *quá*'s linear position is compatible with *quá* being in a clause-medial position, as we have modeled post-predicate excessive *quá* and *hơn* in (34) (see note 17), it is also compatible with exclamative *quá* being in a much higher, clause-peripheral position. In particular, its unembeddability (70) and lack of standards (modulo limited exceptions, in (74b)) makes it consistently utterance-final and also invites its description as one of the language's many sentence-final particles (see e.g. Duffield, 2013; Le, 2015; Nguyen, 2021). We therefore leave the identification of the precise structural position of exclamative *quá* for further work. See also Erlewine 2017, to appear for discussion of the similar challenge of identifying the structural position of sentence-final particles in Chinese languages.

4.3 Summary

In this section we described two additional uses of *quá*: pre-predicate *quá* as an intensifier with restricted distribution, limited to expressions of evaluations with speaker commitment, and post-predicate *quá* as a degree exclamative marker. In both cases, we argue that they developed from certain conventionalized uses of their counterpart excessive *quá*, and must be distinguished from them in the synchronic grammar.

We summarize the inventory of *quá* degree morphemes in Vietnamese, together with the historical relationships between them and their Middle Chinese sources, in (75) below. These four *quá* degree morphemes together account for all uses of *quá* that we are aware of.

(75) **The landscape of *quá* degree morphemes and their historical sources:**

Middle Chinese		Vietnamese		
kua` A excessive	>	*quá* A purpose-oriented excessive	>	*quá* A intensifier with speaker commitment
A *kua`* ... comparative	>	A *quá* ... comparative w/malefactive	>	A *quá* ! exclamative

Note that within each pair of *quá* degree morphemes in a particular linear position, comparison with cognate reflexes of Middle Chinese *kua`* in Chinese languages (see section 3.3) allows us to confidently identify the excessive *quá* as the original source construction which then led to the additional senses to their right, rather than the other way around.

5 Conclusion

This paper has considered the multiple functions of the expression *quá* in Vietnamese. Starting with the puzzle posed by the unusual property of the degree morpheme *quá* in allowing both pre- and post-predicate positions, we showed that the excessive pre- and post-predicate are in fact two different constructions with distinct syntax and semantics: Excessive pre-predicate *quá* is a basic purpose-oriented excessive, whereas excessive post-predicate *quá* is a comparative that conventionally encodes a not-at-issue malefactive inference. We provided concrete compositional semantics for these two *quá* degree morphemes, building on our more general proposal for the syntax and semantics of pre- vs post-predicate degree morphemes in the language in Erlewine and Nguyen 2022.

Although Fortuin (2013: 35) describes both of these approaches of the expression of excess as cross-linguistically plausible (see (19)), our work shows that natural language can indeed conventionalize either meaning, as illustrated through the two excessive constructions in Vietnamese. From a cross-linguistic

perspective, it appears that excessive post-predicate *quá* manifests a relatively rare approach to the expression of excess, encoding only the malefactive component of excessive meaning, offering the opportunity to study the expression of excess via malefactive inference, in isolation.

Our study also offers an explanatory account of the historical development of the various uses of *quá*. In particular, we have shown that excessive pre- and post-predicate *quá* can be traced back to Middle Chinese, with cognate constructions with similar syntax and semantics in contemporary Chinese languages. The two excessive constructions in turn have led to two new senses for *quá* in Vietnamese, forming a pre-predicate intensifier that indicates speaker commitment and a post-predicate exclamative marker. In each case, we describe how the secondary senses came about via context-induced reinterpretation (Heine et al., 1991). By combining detailed description of the syntax and semantics of the contemporary constructions together with comparative evidence and accounts for their historical change, we arrive at a rich and explanatory account of the range of uses of this highly multifunctional expression.

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